

Psychological safety as mediator of patient safety culture

Erick Evander, Hendra Achmadi, Timotius William Yusuf

Department of Hospital Administration, Pelita Harapan University, Jakarta, Indonesia

Article Info

Article history:

Received Jan 13, 2026

Revised Jun 10, 2026

Accepted Jul 12, 2026

Keywords:

Burnout

Healthcare workers

Patient safety culture

Perceived organizational support

Psychological safety

ABSTRACT

Preventable adverse events continue to undermine patient safety globally, yet the psychosocial pathways shaping safety culture remain poorly understood in non-Western hospital settings. This cross-sectional study examines how burnout, job stress, and perceived organizational support influence patient safety culture, with psychological safety as a mediating variable, among 347 healthcare professionals across three Type C hospitals in Jakarta, Indonesia. PLS-SEM results confirm that burnout ($\beta = -0.293$) and job stress ($\beta = -0.323$) significantly erode psychological safety, while perceived organizational support strengthens it ($\beta = 0.440$). Psychological safety, in turn, is the strongest predictor of patient safety culture ($\beta = 0.468$) and mediates all three antecedent relationships, with indirect effects of -0.137 , -0.151 , and $+0.206$ respectively. The model explains 46.5% of variance in patient safety culture. These findings identify psychological safety as the critical mechanism through which workplace conditions reach safety outcomes, and call for hospital interventions targeting supportive leadership, workload management, and non-punitive reporting environments.

This is an open access article under the [CC BY-SA](#) license.



Corresponding Author:

Erick Evander

Department of Hospital Administration, Pelita Harapan University

Jakarta, Indonesia

Email: evander2206@gmail.com

1. INTRODUCTION

Preventable adverse events continue to harm patients worldwide, and translating safety policy into genuine cultural change at the ward level remains an enduring challenge for healthcare systems [1]. Indonesia is no exception: despite the adoption of international frameworks such as the hospital survey on patient safety culture, incident reporting rates remain low and communication breakdowns persist across many facilities [2]. These patterns suggest that procedural reforms alone are insufficient, what also needs attention is the psychosocial environment in which frontline workers actually operate every day [3].

Among the psychosocial risks that receive growing research attention, burnout and job stress stand out as particularly consequential in healthcare. Burnout marked by emotional exhaustion and a declining sense of professional efficacy [4], [5], erodes the teamwork and attentiveness that safety-critical work demands. When job demands consistently outstrip available resources, performance suffers, a dynamic well-captured by job demands–resources (JD-R) theory [6]. On the protective side, perceived organizational support the sense that one's employer genuinely values one's contributions have been shown to sustain motivation, build trust, and encourage the kind of open communication that keeps patients safer [7], [8].

Psychological safety defined as the shared belief that one can speak up, report errors, or disagree without facing punishment has emerged as a central explanatory mechanism linking psychosocial work conditions to safety outcomes [9]–[11]. Teams with higher psychological safety demonstrate more open communication, greater learning from errors, and higher rates of incident reporting [12]–[14]. Despite this

growing evidence, most studies continue to examine burnout, job stress, organizational support, and psychological safety in isolation, rather than as interrelated constructs within a unified model. Such integrated evidence remains particularly scarce in the context of Indonesian Type C hospitals, which serve the majority of the country's population yet have received comparatively little focused empirical attention [15]–[17].

This study addresses that gap by developing and testing an integrated structural model in which burnout, job stress, and perceived organizational support predict patient safety culture both directly and indirectly through psychological safety. Partial least squares structural equation modeling (PLS-SEM) was chosen because it handles the complex latent constructs and modest sample sizes typical of organizational research in this setting [18]. The broader aim is to contribute context-sensitive, theory-driven evidence that can guide safety improvement in Indonesian hospitals—and, by extension, in similarly resource-constrained non-Western healthcare environments where existing evidence remains sparse.

This study advances the patient safety literature in three concrete ways. First, no prior study to the authors' knowledge—has simultaneously modeled burnout, job stress, and perceived organizational support as antecedents of patient safety culture within Indonesian Type C secondary referral hospitals, a hospital tier that is numerically dominant yet critically understudied in the global safety literature. Second, existing research in this setting either treats psychological safety as a standalone outcome or omits it entirely, this study is the first to empirically test it as a formal mediator linking both psychosocial risk factors and organizational resources to safety culture outcomes using PLS-SEM, a method well-suited to the latent, multidimensional nature of the constructs involved. Third, by testing mediation across three theoretically distinct antecedents within a unified structural model, this study moves beyond incremental single-pathway contributions and offers a more integrated explanatory account of how workplace conditions collectively shape safety culture, one that is directly actionable for hospital managers seeking to prioritize limited intervention resources in resource-constrained, non-Western healthcare settings.

2. METHOD

2.1. Research object

The primary object of this research is the theoretical model depicted in the research framework, which posits a set of predictive relationships wherein burnout, job stress, and perceived organizational support act as antecedent variables influencing patient safety culture. Crucially, the model also specifies psychological safety as a key mediating variable that explains the mechanism through which these antecedents exert their influence on safety culture outcomes. The study aims to empirically test and validate this conceptual framework within three secondary referral hospitals in Indonesia.

2.2. Unit of analysis

The unit of analysis in this study is the individual healthcare professional employed at three regional Type C hospitals in West Jakarta. This group includes physicians, nurses, midwives, pharmacists, laboratory analysts, radiographers, and administrative healthcare staff who have direct or indirect contact with patients. Focusing on the individual level is appropriate because the constructs of interest—burnout, job stress, perceived organizational support, and psychological safety are primarily experienced and expressed at the level of individual workers.

2.3. Research type and design

This study adopts a quantitative, cross-sectional design to explore the relationships among the study variables. A cross-sectional approach provides an efficient method for testing hypothesized correlational and mediational pathways simultaneously, allowing the researcher to measure both predictor and outcome variables in a single administration. The research uses a non-interventional approach, meaning no variables were manipulated or any experimental treatment applied by the researchers.

2.4. Population and sampling

The population of this study consisted of all full-time health workers employed at three Type C secondary referral hospitals in West Jakarta, Indonesia, including physicians, nurses, midwives, pharmacists, laboratory analysts, radiographers, and administrative healthcare staff directly involved in hospital services. A non-probability purposive sampling technique was employed to ensure that respondents met specific professional criteria relevant to the research objectives, including full-time employment status and active engagement in clinical or safety-related activities. The minimum sample size was determined through a statistical power analysis using G*Power software, yielding a target of 340 participants, a total of 347 healthcare workers ultimately participated, meeting the minimum requirement and ensuring model stability.

Because purposive sampling does not provide equal selection probability for all population members, the findings should be interpreted with appropriate caution. The results primarily reflect the

characteristics of healthcare workers within the selected hospitals and may not be fully generalizable to hospitals in other regions or with substantially different organizational contexts. Future studies should consider probability sampling designs across multiple hospital types and regions to strengthen external validity.

2.5. Conceptual and operational definitions of variables

The five variables in this study were measured using established psychometric scales to ensure reliability and validity. Each construct's conceptual definition is derived from both seminal and recent literature, and operationalization is reflected by specific items presented to respondents in the research questionnaire. Table 1 summarizes the role, conceptual definition, and measurement instrument for each variable.

Table 1. Conceptual and operational definition of variables

Variable	Role in model	Conceptual definition	Measurement instrument
Burnout	Independent	A psychological syndrome characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment among healthcare workers	Maslach burnout inventory (MBI) [4]
Job stress	Independent	A psychological response arising when job demands exceed an individual's coping capacity	Perceived stress scale (PSS-10) [19]
Perceived organizational support	Independent	Employees' perception of how much the organization values their contributions and cares about their well-being	Survey of perceived organizational support (SPOS) [7], [20]
Psychological safety	Mediating	A shared belief that the work environment is safe for interpersonal risk-taking, such as speaking up or reporting errors	Team psychological safety scale [10], [11]
Patient safety culture	Dependent	Shared values, attitudes, and behaviors that determine commitment to patient safety within the organization	Hospital survey on patient safety culture (HSOPSC v2.0) [2], [21]

2.6. Hypotheses

Drawing on the theoretical frameworks reviewed above, this study proposes seven directional hypotheses. The first two address the role of psychosocial strain: burnout and job stress are both expected to erode the interpersonal trust and openness that define psychological safety, because emotionally depleted workers tend to withdraw from communication and avoid the perceived risk of speaking up. The third hypothesis captures the protective function of the organization: perceived organizational support should strengthen psychological safety by communicating to employees that the institution values their input and will not penalize honest disclosure.

Hypotheses four through seven concern the direct and mediated pathways to patient safety culture. Burnout and job stress are hypothesized to diminish safety culture directly by reducing engagement in safety-oriented behaviors and error reporting. Perceived organizational support and psychological safety are expected to positively predict patient safety culture: organizational support by reinforcing safety norms and motivation, and psychological safety by enabling the open communication and collective learning on which a robust safety culture depends. The seven formal hypotheses are stated below:

- H1: Burnout has a significant negative effect on psychological safety among healthcare workers.
- H2: Job stress has a significant negative effect on psychological safety among healthcare workers.
- H3: Perceived organizational support has a significant positive effect on psychological safety among healthcare workers.
- H4: Burnout has a significant negative direct effect on patient safety culture.
- H5: Psychological safety has a significant positive effect on patient safety culture.
- H6: Perceived organizational support has a significant positive direct effect on patient safety culture.
- H7: Job stress has a significant negative direct effect on patient safety culture.

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Demographic data

As shown in Table 2, this study included a total of 347 healthcare workers, comprising 171 men (49.3%) and 176 women (50.7%). Respondents were distributed across age groups: 25.4% aged 21–30 years, 23.9% aged 31–40 years, 26.8% aged 41–50 years, and 23.9% aged 51–60 years. By professional role, nurses constituted the largest group (46.4%), followed by administrative staff (16.4%), doctors (14.7%), midwives (6%), and laboratory analysts, pharmacists, and radiographers (each 5.5%). Regarding working hours, 34% of respondents reported working 30–40 hours per week, while 66% worked more than 40 hours per week, indicating that extended working hours are common in the sampled hospitals.

Table 2. Demographic data

	Characteristic	n	%
Sex	Man	171	49.3
	Woman	176	50.7
Age	21–30	88	25.4
	31–40	83	23.9
	41–50	93	26.8
	51–60	83	23.9
Position	Nurse	161	46.4
	Administrative staff	57	16.4
	Doctor	51	14.7
	Midwife	21	6.0
	Laboratory analyst	19	5.5
	Pharmacist	19	5.5
	Radiographer	19	5.5
Average working hours/week	30–40 hours	118	34.0
	More than 40 hours	229	66.0

3.1.2. Outer model assessment

Convergent validity was assessed by examining indicator loadings and their statistical significance in the outer model. Indicators with factor loadings below 0.50 and/or non-significant t-values ($t < 1.96$) were identified and removed sequentially, following recommended guidelines for PLS-SEM analysis [18]. The indicator purification process was conducted iteratively, with the lowest-loading indicator removed at each step before re-estimating the model, until all remaining indicators demonstrated acceptable loading values, average variance extracted (AVE) greater than 0.50, and composite reliability exceeding 0.70.

In the initial model estimation, several indicators (e.g., BO1, BO3, BO15, JS9, and PSC indicators with low loadings) did not meet the minimum threshold and were therefore removed in sequence. After each removal, the model was re-estimated to reassess factor loadings, AVE, and composite reliability. The final measurement model shows that all retained indicators satisfied convergent validity criteria, with AVE values exceeding 0.50 and composite reliability above 0.70 for all constructs, as detailed in Tables 3 and 4.

As shown in Table 4, all AVE values exceed 0.50 and all composite reliability values exceed 0.70, confirming that the measurement model meets the established thresholds for convergent validity. These results demonstrate that the retained indicators adequately represent their corresponding latent constructs and that the measurement model is suitable for subsequent structural analysis. Both criteria AVE and composite reliability is consistent with the guidelines recommended by Hair *et al.* [18] for PLS-SEM applications.

Table 3. Convergent validity of factor loadings (selected final indicators)

Construct	Indicator	Loading 1	t-value 1	Loading 2	t-value 2
Burnout (X1)	BO5	0.717	10.718	0.719	8.029
	BO10	0.754	11.803	0.807	13.738
	BO12	0.718	10.272	0.760	10.243
	BO13	0.709	9.855	0.727	9.401
	BO14	0.701	10.733	0.779	13.361
Job stress (X2)	JS1	0.721	19.569	0.706	16.522
	JS4	0.738	19.556	0.743	18.968
	JS5	0.727	21.404	0.738	21.165
	JS6	0.706	18.271	0.722	19.142
	JS8	0.757	26.545	0.781	28.506
Perceived org. support (X3)	POS1	0.778	22.193	0.781	20.399
	POS2	0.722	16.700	0.761	17.034
	POS7	0.703	13.567	0.739	15.107
	POS8	0.702	14.224	0.709	13.374
Psychological safety (M)	PSY1	0.734	23.633	0.768	24.965
	PSY3	0.758	28.280	0.781	27.979
	PSY4	0.748	26.580	0.783	29.817
	PSY7	0.790	36.796	0.816	39.312
Patient safety culture (Y)	PSC4	0.715	24.309	0.797	33.513
	PSC12	0.701	22.401	0.742	24.678
	PSC18	0.706	26.471	0.773	32.391
	PSC19	0.717	27.392	0.754	27.249
	PSC27	0.705	26.946	0.732	25.228

Table 4. AVE and composite reliability

Construct	Composite reliability	AVE
Burnout	0.857	0.576
Job stress	0.814	0.559
Patient safety culture	0.820	0.577
Perceived organizational support	0.742	0.560
Psychological safety	0.799	0.620

3.1.3. Coefficient of determination

This study employs the bootstrapping technique to obtain the t-value and R^2 , both of which are interpreted analogously to standard multiple regression analysis. The model's predictive strength is reflected by the R^2 values derived from the bootstrapping process, as shown in Table 5. These values indicate the proportion of variance in each endogenous construct explained by its designated predictors within the structural model.

The R^2 value for patient safety culture is 0.465, indicating that 46.5% of its variance is explained by burnout, job stress, perceived organizational support, and psychological safety, the remaining 53.5% is attributed to factors not included in the present model. The R^2 value for psychological safety is 0.214, indicating that 21.4% of its variance is explained by the three antecedent variables, with the remaining 78.6% influenced by other unobserved variables. These values reflect moderate explanatory power, consistent with expectations for cross-sectional survey research in complex organizational settings.

Table 5. Coefficient of determination

Variable	R^2	p-value
Patient safety culture	0.465	0.000
Psychological safety	0.214	0.000

3.1.4. Indirect effect analysis

Bootstrapping results confirmed that psychological safety significantly mediates the relationships between each antecedent variable and patient safety culture, as summarized in Table 6. All indirect paths were statistically significant ($p < 0.001$), supporting the mediating role of psychological safety in the proposed model. These findings underscore the importance of psychological safety as an explanatory pathway through which psychosocial conditions and organizational resources translate into safety culture outcomes.

Table 6. Indirect effect analysis

Path	t-statistic	p-value
Burnout → psychological safety → patient safety culture ($\beta = -0.137$)	4.938	0.000
Job stress → psychological safety → patient safety culture ($\beta = -0.151$)	5.737	0.000
POS → psychological safety → patient safety culture ($\beta = +0.206$)	7.241	0.000

3.1.5. Hypothesis testing (inner model)

Hypothesis testing was performed using t-statistics and p-values from the bootstrapping procedure, a hypothesis is accepted when the p-value falls below 0.05. The results are presented in Table 7 and discussed in detail below. All seven hypotheses were accepted, confirming the proposed structural relationships among the study constructs. The structural model is illustrated in Figure 1.

Table 7. Hypothesis testing results

H	Path	β	t-statistic	p-value	Conclusion
H1	Burnout → psychological safety	-0.29281	5.08276	0.000	Accepted
H2	Job stress → psychological safety	-0.32286	7.06354	0.000	Accepted
H3	Perceived org. Support → psychological safety	0.43988	8.53848	0.000	Accepted
H4	Burnout → patient safety culture	-0.26150	5.56453	0.000	Accepted
H5	Psychological safety → patient safety culture	0.46764	11.08772	0.000	Accepted
H6	Perceived org. Support → patient safety culture	0.32987	6.65710	0.000	Accepted
H7	Job stress → patient safety culture	-0.17361	3.91795	0.000	Accepted

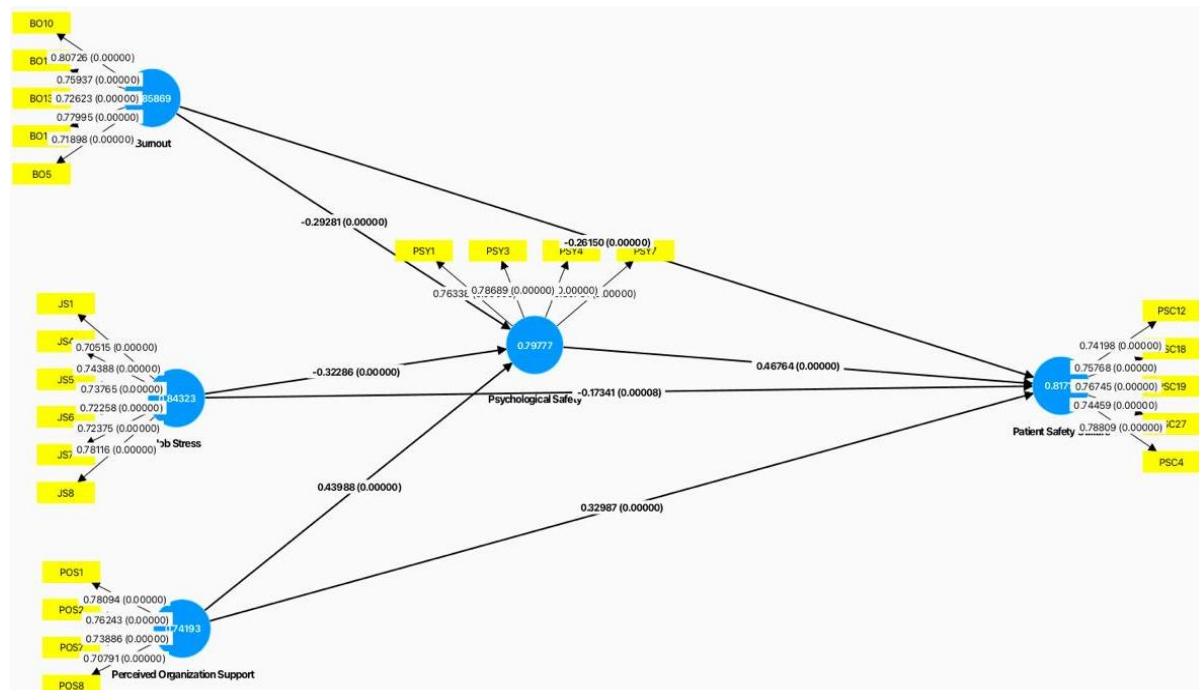


Figure 1. Structural model (path diagram)

3.2. Discussion

The results paint a consistent picture: working conditions matter for patient safety culture, and they matter most when they affect how safe workers feel speaking up. Across all seven hypothesized paths, the data confirmed our expectations, and the mediation analyses add an important layer by showing that a large share of burnout's and job stress's influence on safety culture operates through their corrosive effect on psychological safety. In that sense, the findings are not merely additive, they suggest a coherent mechanism that hospital leaders can actually target.

Starting with burnout: it negatively predicted psychological safety ($\beta = -0.293$, $t = 5.083$, $p < 0.001$) and patient safety culture directly ($\beta = -0.262$, $t = 5.565$, $p < 0.001$), with an additional indirect effect through psychological safety ($\beta = -0.137$)—a combined influence that ranked it among the stronger effects in the model. This is perhaps unsurprising once you consider what burnout actually does to a person at work. Emotional exhaustion chips away at the interpersonal reserves that honest communication requires, a nurse who feels drained and undervalued is less likely to raise a concern, challenge a colleague's decision, or report a near-miss. Prior studies have consistently linked burnout to deteriorating team climates and reduced safety engagement [14], [15], and the present findings reinforce that pattern in the Indonesian hospital context.

Second, job stress showed a similar pattern, with significant negative effects on psychological safety ($\beta = -0.323$, $t = 7.064$, $p < 0.001$) and patient safety culture directly ($\beta = -0.173$, $t = 3.918$, $p < 0.001$), plus an indirect effect via psychological safety ($\beta = -0.151$). When demands outpace what workers can reasonably manage, cognitive and emotional bandwidth narrows, and the first casualties tend to be discretionary behaviors—exactly the kind of proactive communication and careful error reporting that safety culture requires. Job Demands–Resources theory provides a useful frame here [6]: psychological safety functions as a resource, and sustained stress gradually depletes it. Empirical work from other healthcare settings corroborates this, linking high job demands to poorer safety competency and elevated error rates [22]–[24].

Perceived organizational support moved in the opposite direction, positively predicting both psychological safety ($\beta = 0.440$, $t = 8.538$, $p < 0.001$) and patient safety culture directly ($\beta = 0.330$, $t = 6.657$, $p < 0.001$), with the largest indirect effect of the three antecedents ($\beta = +0.206$ through psychological safety), confirming it as the strongest protective factor in the model. When healthcare workers feel that their hospital genuinely values their contributions and cares about their well-being, they are more willing to take the interpersonal risks that candid communication involves. Organizational support theory offers a straightforward explanation: perceived care generates a felt obligation to reciprocate, which translates into greater motivation, trust, and safety engagement [7], [8], [25].

Psychological safety was the single strongest predictor of patient safety culture in the model ($\beta = 0.468$, $t = 11.088$, $p < 0.001$), and it mediated the effects of all three antecedents. This dual role as both an

outcome of working conditions and a driver of safety culture is precisely what makes it strategically valuable for hospital managers. Edmondson's foundational work established why this should be so: teams that feel psychologically safe are more likely to raise concerns, acknowledge mistakes, and learn collectively [11]. A recent systematic and narrative review confirms that this translates into measurable patient safety improvements, including higher error reporting rates and fewer ventilator-associated events [26]. What this study adds is the mediational evidence: psychological safety does not operate in a vacuum, but rather serves as the mechanism through which the broader psychosocial climate, whether threatening or supportive, it eventually reaches safety culture [27].

The bidirectional relationship between burnout, patient safety culture, and workplace safety is also supported by Kim *et al.* [28], who found that patient safety culture significantly predicts health worker burnout and workplace violence, underscoring that safety culture is not merely an outcome but also a protective organizational factor. Similarly, Mossburg and Himmelfarb [29] demonstrated in a systematic review that professional burnout is consistently associated with lower safety engagement and poorer patient safety outcomes across diverse healthcare settings, a finding that strengthens the theoretical rationale for the burnout–safety culture pathway observed in this study. Furthermore, Brimhall *et al.* [30] showed that leadership behaviors promoting self-worth, inclusion, and trust are significant antecedents of psychological safety and, in turn, medical error reporting, suggesting that organizational interventions targeting leadership could amplify the benefits of psychological safety for safety culture.

The structural model explains 46.5% of the variance in patient safety culture, indicating moderate predictive power and suggesting that additional contextual variables such as leadership quality, staffing ratios, and organizational communication climate may contribute to safety culture formation beyond the factors examined here. Nevertheless, the findings provide strong empirical support for an integrated model connecting individual psychosocial states and organizational support mechanisms to safety outcomes. These results have direct practical implications for hospital management and health policy, as discussed in the conclusion.

4. CONCLUSION

Taken together, the findings make a straightforward argument: you cannot meaningfully improve patient safety culture without attending to how healthcare workers feel at work. Burnout and job stress reliably undermine it, organizational support reliably strengthens it, and psychological safety sits at the center of both processes, amplifying or attenuating the effect of everything else. With 46.5% of the variance in patient safety culture explained, the model provides a reasonably strong empirical foundation for intervention, one that points away from purely procedural fixes and toward the relational and organizational conditions that either enable or constrain frontline safety behavior.

The key contribution of this study is empirical and contextual: it provides the first integrated PLS-SEM test of these relationships specifically within Indonesian Type C hospitals, and it demonstrates that psychological safety is not merely a desirable cultural feature but a functional mediator that hospitals can deliberately cultivate. Sustainable safety improvement, the data suggest, depends on addressing burnout and job stress while simultaneously strengthening the organizational support that makes psychological safety possible. For managers, this means that leadership style, non-punitive reporting environments, and staff well-being programs are not peripheral concerns, they are core patient safety infrastructure.

This study has three primary limitations. First, the sample is geographically restricted to three Type C secondary referral hospitals in Jakarta, which limits generalizability to other hospital types and regions with different organizational contexts. Second, the model's R^2 of 46.5% for patient safety culture indicates that more than half of the variance is attributable to factors not captured by the present model, such as leadership style, workload intensity, staffing adequacy, safety training, communication climate, and individual resilience.

Third, the cross-sectional design prevents causal inference, and common method bias cannot be fully excluded despite the use of validated scales. Future research should employ longitudinal or experimental designs to establish directionality, and probability sampling across multiple hospital types and regions to improve external validity. Including additional organizational and individual variables, such as leadership behaviors, safety training intensity, and psychological resilience—may further improve explanatory power and provide a more comprehensive understanding of patient safety culture determinants.

At the policy level, government and health authorities should incorporate psychosocial risk management into national hospital accreditation standards and patient safety programs. Policies targeting workforce well-being, including minimum staffing standards, reasonable working hour regulations, and mental health support for healthcare workers may serve as upstream strategies to enhance patient safety culture. Structured guidance, training modules, and monitoring tools for psychological safety should be

provided to assist hospitals, particularly Type C facilities, in implementing sustainable safety promotion interventions.

ACKNOWLEDGMENTS

The authors gratefully acknowledge the support of the Master of Health Administration, Postgraduate Program, Universitas Pelita Harapan, Jakarta, Indonesia, for its continuous encouragement and provision of academic resources throughout this research.

FUNDING INFORMATION

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. All research activities were conducted without external financial support.

AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Erick Evander	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	
Hendra Achmadi	✓									✓		✓	✓	
Timotius William Yusuf	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	

C : **C**onceptualization

M : **M**ethodology

So : **S**oftware

Va : **V**alidation

Fo : **F**ormal analysis

I : **I**nvestigation

R : **R**esources

D : **D**ata Curation

O : Writing - **O**riginal Draft

E : Writing - Review & **E**diting

Vi : **V**isualization

Su : **S**upervision

P : **P**roject administration

Fu : **F**unding acquisition

CONFLICT OF INTEREST STATEMENT

All authors declare no conflict of interest related to this study. No financial or non-financial competing interests exist that could have influenced the design, conduct, reporting, or publication of this research.

INFORMED CONSENT

We have obtained informed consent from all individuals included in this study. Prior to data collection, all participants were fully informed about the purpose, procedures, voluntary nature, and confidentiality of the research. Written informed consent was obtained from each participant before their inclusion in the study. No personal identifying information was disclosed.

ETHICAL APPROVAL

This research was granted ethics approval by the Pelita Harapan University Ethics Committee under reference number 046/MARS/EC/X/2025. All participants provided informed consent prior to data collection. Data were handled in accordance with applicable ethical guidelines for research involving human subjects.

DATA AVAILABILITY

The data that support the findings of this study are available on request from the corresponding author. The data, which contain information that could compromise the privacy of research participants, are not publicly available due to ethical restrictions and the terms of informed consent under which the data were collected.

REFERENCES

- [1] World Health Organization, "Global patient safety action plan 2021–2030: towards eliminating avoidable harm in health care. World Health Organization," WHO. Accessed: Sep. 01, 2025. [Online]. Available: <https://www.who.int/publications/i/item/9789240032705>.
- [2] Agency for Healthcare Research and Quality (AHRQ), "SOPS hospital survey version 2.0," AHRQ. Accessed: Oct. 01, 2025. [Online]. Available: <https://www.ahrq.gov/sites/default/files/wysiwyg/sops/surveys/hospital/SOPS-Hospital-Survey-2.0-5-26-2021.pdf>.
- [3] B. A. Pramesona, A. Sukohar, S. Taneepanichskul, and M. F. A. Rasyid, "A qualitative study of the reasons for low patient safety incident reporting among Indonesian nurses," *Revista Brasileira de Enfermagem*, vol. 76, no. 4, 2023, doi: 10.1590/0034-7167-2022-0583.
- [4] C. Maslach, S. E. Jackson, and M. Leiter, "Maslach burnout inventory manual," in *Evaluating Stress: A Book of Resources*, 4th ed., The Scarecrow Press, 1997.
- [5] S. Edú-Valsania, A. Laguía, and J. A. Moriano, "Burnout: a review of theory and measurement," *International Journal of Environmental Research and Public Health*, vol. 19, no. 3, p. 1780, Feb. 2022, doi: 10.3390/ijerph19031780.
- [6] A. B. Bakker, E. Demerouti, and A. Sanz-Vergel, "Job demands–resources theory: ten years later," *Annual Review of Organizational Psychology and Organizational Behavior*, vol. 10, no. 1, pp. 25–53, Jan. 2023, doi: 10.1146/annurev-orgpsych-120920-053933.
- [7] L. Rhoades, R. Eisenberger, and S. Armeli, "Affective commitment to the organization: The contribution of perceived organizational support," *Journal of Applied Psychology*, vol. 86, no. 5, pp. 825–836, Oct. 2001, doi: 10.1037/0021-9010.86.5.825.
- [8] F. K. Opoku and R. K. Boateng, "Employee engagement, perceived organizational support, and job performance of medical staff at the Cape Coast Teaching Hospital," *PLOS ONE*, vol. 19, no. 12, p. e0315451, Dec. 2024, doi: 10.1371/journal.pone.0315451.
- [9] J. Kane, L. Munn, S. F. Kane, and E. Srulovici, "Defining speaking up in the healthcare system: a systematic review," *Journal of General Internal Medicine*, vol. 38, no. 15, pp. 3406–3413, Nov. 2023, doi: 10.1007/s11606-023-08322-0.
- [10] A. C. Edmondson and D. P. Bransby, "Psychological safety comes of age: observed themes in an established literature," *Annual Review of Organizational Psychology and Organizational Behavior*, vol. 10, no. 1, pp. 55–78, Jan. 2023, doi: 10.1146/annurev-orgpsych-120920-055217.
- [11] A. Edmondson, "Psychological safety and learning behavior in work teams," *Administrative Science Quarterly*, vol. 44, no. 2, pp. 350–383, Jun. 1999, doi: 10.2307/2666999.
- [12] A. C. Edmondson and Z. Lei, "Psychological safety: the history, renaissance, and future of an interpersonal construct," *Annual Review of Organizational Psychology and Organizational Behavior*, vol. 1, no. 1, pp. 23–43, Mar. 2014, doi: 10.1146/annurev-orgpsych-031413-091305.
- [13] S. E. Lee, J. Seo, and A. Squires, "Voice, silence, perceived impact, psychological safety, and burnout among nurses: A structural equation modeling analysis," *International Journal of Nursing Studies*, vol. 151, p. 104669, Mar. 2024, doi: 10.1016/j.ijnurstu.2023.104669.
- [14] R. de Lisser, M. S. Dietrich, J. Spetz, R. Ramanujam, J. Lauderdale, and D. P. Stollendorf, "Psychological safety is associated with better work environment and lower levels of clinician burnout," *Health Affairs Scholar*, vol. 2, no. 7, Jun. 2024, doi: 10.1093/haschl/qxae091.
- [15] I. G. Juanamasta, Y. Aunguroch, J. Gunawan, M. J. Dino, and R. Polsook, "Prevalence of burnout and its determinants among Indonesian nurses: a multicentre study," *Scientific Reports*, vol. 14, no. 1, p. 31559, Dec. 2024, doi: 10.1038/s41598-024-63550-6.
- [16] A. Lamuri *et al.*, "Burnout dimension profiles among healthcare workers in Indonesia," *SSRN Electronic Journal*, 2022, doi: 10.2139/ssrn.4171584.
- [17] Ministry of Health of the Republic of Indonesia, "Survey on health worker burnout and wellbeing (national report)," 2022.
- [18] J. F. Hair, G. T. M. Hult, C. M. Ringle, M. Sarstedt, N. P. Danks, and S. Ray, *Partial least squares structural equation modeling (PLS-SEM) using R*. in Classroom Companion: Business. Cham: Springer International Publishing, 2021. doi: 10.1007/978-3-030-80519-7.
- [19] S. Cohen, T. Kamarck, and R. Mermelstein, "A global measure of perceived stress," *Journal of Health and Social Behavior*, vol. 24, no. 4, p. 385, Dec. 1983, doi: 10.2307/2136404.
- [20] L. Rhoades and R. Eisenberger, "Perceived organizational support: A review of the literature," *Journal of Applied Psychology*, vol. 87, no. 4, pp. 698–714, Aug. 2002, doi: 10.1037/0021-9010.87.4.698.
- [21] R. Westat *et al.*, "Hospital survey on patient safety culture (HSOPSC)," AHRQ. Accessed: Sep. 01, 2025. [Online]. Available: <https://www.ahrq.gov/sites/default/files/wysiwyg/sops/surveys/hospital/hospital-user-guide.pdf>.
- [22] C. Tai, D. Chen, Y. Zhang, Y. Teng, X. Li, and C. Ma, "Exploring the influencing factors of patient safety competency of clinical nurses: a cross-sectional study based on latent profile analysis," *BMC Nursing*, vol. 23, no. 1, p. 154, Mar. 2024, doi: 10.1186/s12912-024-01817-z.
- [23] S.-K. Kwak, J.-S. Ahn, and Y.-H. Kim, "The association of job stress, quality of sleep, and the experience of near-miss errors among nurses in general hospitals," *Healthcare*, vol. 12, no. 6, p. 699, Mar. 2024, doi: 10.3390/healthcare12060699.
- [24] A. N. Koehler, M. P. J. Knudson, P. J. Ballard, L. M. Nicolotti, E. Caballero-Quinones, S. S. Daniel, "Video review of family medicine resident clinical encounters: a tool for building emotional intelligence," *Frontiers in Public Health*, vol. 11, p. 1188041, 2023. doi: 10.3389/fpubh.2023.1188041.
- [25] A. Newman, R. Donohue, and N. Eva, "Psychological safety: A systematic review of the literature," *Human Resource Management Review*, vol. 27, no. 3, pp. 521–535, 2017, doi: 10.1016/j.hmr.2017.01.001.
- [26] A. Montgomery *et al.*, "Psychological safety and patient safety: A systematic and narrative review," *PLOS ONE*, vol. 20, no. 4, 2025, doi: 10.1371/journal.pone.0322215.
- [27] K. E. Grailey, E. Murray, T. Reader, and S. J. Brett, "The presence and potential impact of psychological safety in the healthcare setting: An evidence synthesis," *BMC Health Services Research*, vol. 21, no. 773, 2021, doi: 10.1186/s12913-021-06740-6.
- [28] S. Kim, R. Kitzmiller, M. Baernholdt, M. R. Lynn, and C. B. Jones, "Patient safety culture: The impact on workplace violence and health worker burnout," *Workplace Health & Safety*, vol. 71, no. 2, pp. 78–88, 2023.
- [29] S. E. Mossburg and C. D. Himmelfarb, "The association between professional burnout and engagement with patient safety culture and outcomes: A systematic review," *Journal of Patient Safety*, vol. 17, no. 8, 2021, doi: 10.1097/PTS.0000000000000519.
- [30] K. C. Brimhall, C. Y. Tsai, R. Eckardt, S. Dionne, B. Yang, and A. Sharp, "The effects of leadership for self-worth, inclusion, trust, and psychological safety on medical error reporting," *Health Care Management Review*, vol. 48, no. 2, pp. 120–129, 2023, doi: 10.1097/HMR.0000000000000358.

BIOGRAPHIES OF AUTHORS

Erick Evander    is a medical doctor and Master of Hospital Administration (MHA) candidate at Universitas Pelita Harapan (UPH), Jakarta, Indonesia. He completed his medical degree (MD) from the Faculty of Medicine, Universitas Pelita Harapan. His research interests include patient safety, healthcare quality management, and psychosocial factors in clinical settings. In this study, he was responsible for conceptualization, literature review, data collection, data analysis, and manuscript writing. He can be contacted at email: evander2206@gmail.com.



Hendra Achmadi    is a Professor of Data Analytics Management at the Faculty of Business, Universitas Pelita Harapan (UPH), Jakarta, Indonesia. His academic expertise spans quantitative research methodology, structural equation modeling, business analytics, and organizational management. He has supervised and contributed to numerous research projects involving advanced statistical methods in healthcare and business contexts. In this study, he contributed to research design, methodological supervision, and critical revision of the manuscript. He can be contacted at email: hendra.achmadi@uph.edu.



Timotius William Yusuf    is a dentist (drg.) and Master of Hospital Administration (MHA) candidate at Universitas Pelita Harapan (UPH), Jakarta, Indonesia. He holds a dental degree from an accredited Indonesian dental school and currently practices as a general dentist. His research interests include hospital management, patient safety, and healthcare workforce well-being. In this study, he contributed to data collection, literature review, and manuscript preparation. He can be contacted at email: 01615240037@student.uph.edu.